Lobster Tomalley Testing for PSP Toxins

Final Report

Kelsey Vaughn
Chris Nash
New Hampshire Department of Environmental Services, Shellfish Program

19 September 2013

Introduction

The New Hampshire Department of Environmental Services (NHDES) Shellfish Program supported testing of New Hampshire lobster tomalley for paralytic shellfish poisoning (PSP) toxins under the 2008 New Hampshire Red Tide Disaster Relief Grant. The objective for this testing was to help managers better understand how quickly PSP toxins accumulate in lobster tomalley, which will enhance appropriate consumption advisory decisions and other management actions. Due to delays in receiving federal funds, the NHDES Shellfish Program utilized its nonfederal sampling budget to purchase adult lobsters in 2009, and the New Hampshire Fish and Game Department (NHF&G) utilized its own funding to sample juvenile lobsters in 2009. During 2010 and 2011, federal funds were used for sample acquisition and transportation to the analytical lab at the Maine Department of Marine Resources (MEDMR). Sample analysis costs were borne by the MEDMR in 2010 and 2011. For the 2012 red tide season, federal funds were used for sample acquisition, transportation to the Resource Access International LLC lab, and sample analysis by Resource Access International.

Materials and Methods

In order to provide a more complete analysis of PSP toxins in lobster tomalley, juvenile and adult lobsters were harvested from offshore and inshore sites during the 2009-2012 red tide seasons, specifically June through September of those years. NHF&G collected juvenile lobsters at offshore traps in 2009 and at inshore and offshore locations in 2010, 2011, and 2012. Measurements and observations of each lobster were taken by NHF&G and NHDES staff during the 2009, 2011, and 2012 seasons. Seaview Lobster Company collected adult lobsters at a commercial lobstering ground off of Rye Harbor during all four red tide seasons. Measurements and observations of each lobster were taken by NHDES staff during the 2009, 2010, and 2011 seasons. These measurement and observation data are included in Appendix I.

During the 2009-2011 red tide seasons, tomalley was extracted from the lobster samples by NHDES and MEDMR staff. Tomalley was analyzed by MEDMR staff, using the mouse bioassay (MBA) method. During the 2012 red tide season, tomalley was extracted by NHDES and Resource Access International staff and analyzed by Resource Access International. Tomalley was tested for biotoxins using the AOAC boiling acid extraction and mouse bioassay. During all four years of this study, tomalley from individual

juvenile lobsters was pooled by collection date and location, and the pooled tomalley was analyzed for biotoxins.

Results and Conclusions

Low PSP toxin levels were detected for inshore and offshore adult and juvenile lobster tomalley samples during 2010, 2011, and 2012 (Appendix I). There were no severe red tide bloom events during the 2010-2012 red tide seasons, as indicated by PSP toxin testing of blue mussel samples from inshore and offshore locations (blue mussel PSP testing was not funded under this grant).

In 2009, there were two red tide bloom events in New Hampshire waters. Offshore shellfish toxicity appeared in early May. The resulting early May offshore Atlantic closure was extended to include all nearshore Atlantic waters at the end of May, when shellfish toxicity in Hampton mussels began to approach the NSSP closure threshold of 80µg/100g. Shellfish toxicity subsided through the month of June, and all PSP closures were lifted on June 26, 2009. Shortly following an area-wide rainfall closure on July 2, PSP levels rapidly spiked in the Gulf of Maine. Following verbal reports of very high toxicity in Maine and Massachusetts on July 11-12, 2009, shellfish samples collected on July 13 and 14 in New Hampshire showed very high toxin levels, and all Atlantic waters were closed for harvest on July 13. Red tide levels began to fall at all sites the following week in blue mussels, and while that trend continued into August, Atlantic surf clams showed high toxin levels in mid-August. The Atlantic closures remained in place until September 11, following surf clam samples that showed low toxicity.

All juvenile lobster tomalley samples in 2009 showed low toxicity (<42 µg/100g). All adult lobster tomalley samples in 2009 showed low toxicity (≤52 µg/100g) except for one lobster that was harvested on August 10, 2009 (the average of all four adult lobsters harvested on that date was 93 µg/100g). Blue mussel samples harvested at offshore and inshore locations on that date had <44 µg/100g. The higher toxicity value found in the lobsters on August 10 could have resulted from bioaccumulation of PSP toxins over the previous month, when toxin values over the NSSP closure threshold were observed in blue mussels; however, it should be noted that the tomalley from lobsters harvested on August 17 showed low toxicity (≤43 µg/100g).

Although there was an adequate sample size for this study, environmental conditions limited the scope of the analysis. Because only one relatively severe red tide bloom event occurred during this study, it is difficult to determine how quickly PSP toxins accumulate in lobster tomalley. Lobster tomalley samples taken on August 10, 2009 could have indicated bioaccumulation of PSP toxins, resulting from the presence of a red tide bloom over the previous month. These higher PSP toxin levels were only detected in adult lobsters and not the juvenile lobsters harvested on that same date. Several factors could have caused this discrepancy, including age, diet, and harvest location. In order to develop a more complete understanding of PSP toxin accumulation in lobster tomalley, more data needs to be collected during red tide bloom events.

Appendix I
2009-2012 Lobster Tomalley Data

Sample ID	Station	Harvester	Harvest Date	Age	Sex	Live Weight (g)	Carapace Length (mm)	Tomalley Weight (g)	Shell Type	MBA Score (ug/100g)	Comments
BBH 10-1	Offshore	NHF&G	6/9/2009	Juvenile	F	642.0	91.0	29.4	H	<42	
BBH 10-2	Offshore	NHF&G	6/9/2009	Juvenile	F	134.7	83.1	9.6	H	pooled	
BBH 10-3	Offshore	NHF&G	6/9/2009	Juvenile	F	346.7	77.7	20.3	H	pooled	
BBH 10-4	Offshore	NHF&G	6/9/2009	Juvenile	F	264.2	71.5	16.5	H	pooled	
BBH	Offshore	NHF&G	6/9/2009	Juvenile	F	297.4	82.5	25.0	H	pooled	
BBH	Offshore	NHF&G	6/9/2009	Juvenile	M	201.8	63.0	11.4	H	pooled	
BBH	Offshore	NHF&G	6/9/2009	Juvenile	M	136.0	58.0	7.7	H	pooled	
BBH	Offshore	NHF&G	6/9/2009	Juvenile	F	181.4	65.1	12.5	H	pooled	
BBH	Offshore	NHF&G	6/9/2009	Juvenile	F	328.6	81.6	21.1	H	pooled	
BBH	Offshore	NHF&G	6/9/2009	Juvenile	M	104.0	56.1	7.3	H	pooled	
BBH	Offshore	NHF&G	6/9/2009	Juvenile	M	319.4	76.1	21.8	H	pooled	
BBH	Offshore	NHF&G	7/14/2009	Juvenile	M	-	77.3	20.4	S	<42	frozen whole, some shell damage when handled for processing
BBH	Offshore	NHF&G	7/14/2009	Juvenile	F	-	73.5	2.9	S	pooled	frozen whole, some shell damage when handled for processing
BBH	Offshore	NHF&G	7/14/2009	Juvenile	M	-	90.0	13.5	S	pooled	frozen whole, some shell damage when handled for processing
BBH 26-31	Offshore	NHF&G	7/14/2009	Juvenile	F	-	81.3	14.1	S	pooled	frozen whole, some shell damage when handled for processing
BBH 26-32	Offshore	NHF&G	7/14/2009	Juvenile	F	-	76.3	14.2	H	pooled	frozen whole, some shell damage when handled for processing
BBH 26-33	Offshore	NHF&G	7/14/2009	Juvenile	F	-	58.2	5.4	H	pooled	frozen whole, some shell damage when handled for processing
BBH 26-34	Offshore	NHF&G	7/14/2009	Juvenile	F	-	60.2	9.6	S	pooled	frozen whole, some shell damage when handled for processing
BBH 26-27	Offshore	NHF&G	7/14/2009	Juvenile	M	-	57.2	5.3	S	pooled	frozen whole, some shell damage when handled for processing
BBH 26-28	Offshore	NHF&G	7/14/2009	Juvenile	M	-	58.2	2.1	S	pooled	frozen whole, some shell damage when handled for processing
BBH	Offshore	NHF&G	8/10/2009	Juvenile	M	292.2	79.3	25.3	S	<42	
BBH	Offshore	NHF&G	8/10/2009	Juvenile	F	234.6	60.1	16.5	S	pooled	
BBH	Offshore	NHF&G	8/10/2009	Juvenile	M	269.2	72.6	10.7	S	pooled	
BBH	Offshore	NHF&G	8/10/2009	Juvenile	F	272.1	72.3	16.9	S	pooled	
BBH	Offshore	NHF&G	8/10/2009	Juvenile	F	204.3	65.4	12.7	H	pooled	
BBH	Offshore	NHF&G	8/10/2009	Juvenile	M	281.3	70.2	19.6	H	pooled	
BBH	Offshore	NHF&G	8/10/2009	Juvenile	M	121.7	51.0	9.6	H	pooled	
BBH	Offshore	NHF&G	8/10/2009	Juvenile	M	43.7	38.7	3.3	H	pooled	
BBH	Offshore	NHF&G	8/10/2009	Juvenile	M	97.5	49.9	5.3	H	pooled	
BBH	Offshore	NHF&G	8/10/2009	Juvenile	F	101.7	51.4	6.4	H	pooled	
BBH	Offshore	NHF&G	8/10/2009	Juvenile	F	171.9	58.4	8.4	H	pooled	
BBH	Offshore	NHF&G	8/10/2009	Juvenile	F	289.4	71.8	13.2	S	pooled	
BBH	Offshore	NHF&G	8/10/2009	Juvenile	M	384.4	77.7	20.5	H	pooled	
BBH	Offshore	NHF&G	8/10/2009	Juvenile	F	310.1	73.4	17.0	H	pooled	
BBH 26-29	Offshore	NHF&G	9/21/2009	Juvenile	M	269.3	76.3	22.9	H	<42	
BBH 26-30	Offshore	NHF&G	9/21/2009	Juvenile	F	281.1	70.3	14.0	H	pooled	
BBH 10-5	Offshore	NHF&G	9/21/2009	Juvenile	M	226.6	66.3	12.0	S	pooled	
pooled	Offshore	NHF&G	9/21/2009	Juvenile	F	209.6	63.3	10.8	S	pooled	

pooled	Offshore	NHF&G	9/21/2009	Juvenile	F	337.8	75.3	19.3	S	pooled	
pooled	Offshore	NHF&G	9/21/2009	Juvenile	F	193.0	61.2	13.2	H	pooled	
pooled	Offshore	NHF&G	9/21/2009	Juvenile	M	361.2	78.3	16.8	S	pooled	
pooled	Offshore	NHF&G	9/21/2009	Juvenile	F	247.0	67.3	14.1	H	pooled	
pooled	Offshore	NHF&G	9/21/2009	Juvenile	M	143.1	59.2	8.6	S	pooled	
pooled	Offshore	NHF&G	9/21/2009	Juvenile	M	191.9	74.3	17.1	S	pooled	
pooled	Offshore	NHF&G	9/21/2009	Juvenile	F	288.5	74.3	22.5	S	pooled	
pooled	Offshore	NHF&G	9/21/2009	Juvenile	M	254.3	67.3	14.9	H	pooled	
pooled	Offshore	NHF&G	9/21/2009	Juvenile	M	194.3	65.3	13.1	H	pooled	
BBH	Offshore	NHF&G	9/21/2009	Juvenile	F	131.8	55.2	9.6	S	pooled	
pooled	Offshore	NHF&G	9/21/2009	Juvenile	M	244.4	67.3	11.6	S	pooled	
pooled	Offshore	NHF&G	9/21/2009	Juvenile	M	154.1	58.2	7.5	S	pooled	
pooled	Offshore	NHF&G	9/21/2009	Juvenile	M	145.4	54.2	6.5	S	pooled	
pooled	Offshore	NHF&G	9/21/2009	Juvenile	M	64.6	41.2	3.9	S	pooled	
pooled	Rye Harbor	Pete Flanigan	6/9/2009	Adult	M	870.3	106.4	40.2	H	<42	
pooled	Rye Harbor	Pete Flanigan	6/9/2009	Adult	F	782.6	102.4	30.1	H	<42	
pooled	Rye Harbor	Pete Flanigan	6/9/2009	Adult	F	529.1	86.3	20.8	H	46	
pooled	Rye Harbor	Pete Flanigan	6/9/2009	Adult	M	443.4	83.3	21.8	H	<42	
pooled	Rye Harbor	Pete Flanigan	7/6/2009	Adult	F	-	97.4	8.5	S	<42	frozen whole, some shell damage when handled for processing
pooled	Rye Harbor	Pete Flanigan	7/6/2009	Adult	M	-	81.3	17.0	S	<42	frozen whole, some shell damage when handled for processing
pooled	Rye Harbor	Pete Flanigan	7/6/2009	Adult	M	-	84.3	8.6	S	<42	frozen whole, some shell damage when handled for processing
pooled	Rye Harbor	Pete Flanigan	7/6/2009	Adult	M	-	94.4	13.6	S	<42	frozen whole, some shell damage when handled for processing
pooled	Rye Harbor	Pete Flanigan	7/13/2009	Adult	M	-	83.3	15.2	S	<42	frozen whole, some shell damage when handled for processing
BBH	Rye Harbor	Pete Flanigan	7/13/2009	Adult	M	-	91.4	17.9	S	<42	frozen whole, some shell damage when handled for processing
pooled	Rye Harbor	Pete Flanigan	7/13/2009	Adult	M	-	91.4	18.6	S	<42	frozen whole, some shell damage when handled for processing
pooled	Rye Harbor	Pete Flanigan	7/13/2009	Adult	M	-	81.3	10.9	S	<42	frozen whole, some shell damage when handled for processing
pooled	Rye Harbor	Pete Flanigan	7/20/2009	Adult	M	443.4	81.3	19.6	S	<42	
pooled	Rye Harbor	Pete Flanigan	7/20/2009	Adult	M	405.0	81.3	11.5	S	<42	
pooled	Rye Harbor	Pete Flanigan	7/20/2009	Adult	M	656.8	90.4	26.0	S	<42	
pooled	Rye Harbor	Pete Flanigan	7/20/2009	Adult	F	493.5	90.4	27.7	H	<42	
pooled	Rye Harbor	Pete Flanigan	7/25/2009	Adult	F	370.4	81.3	14.8	H	<42	
pooled	Rye Harbor	Pete Flanigan	7/25/2009	Adult	F	427.3	81.3	15.8	S	<42	
BBH	Rye Harbor	Pete Flanigan	7/25/2009	Adult	F	658.9	94.4	25.5	S	<42	

pooled	Rye Harbor	Pete Flanigan	7/25/2009	Adult	M	640.0	91.4	12.6	S	<42	
pooled	Rye Harbor	Pete Flanigan	8/4/2009	Adult	M	407.6	82.3	8.0	S	<42	
pooled	Rye Harbor	Pete Flanigan	8/4/2009	Adult	M	684.9	93.4	16.9	S	<42	
pooled	Rye Harbor	Pete Flanigan	8/4/2009	Adult	M	490.0	86.3	18.5	S	<42	
pooled	Rye Harbor	Pete Flanigan	8/4/2009	Adult	M	623.4	92.4	14.7	S	<42	
pooled	Rye Harbor	Pete Flanigan	8/10/2009	Adult	F	483.8	87.7	18.2	S	49	
pooled	Rye Harbor	Pete Flanigan	8/10/2009	Adult	M	728.8	93.6	38.6	S	221	
pooled	Rye Harbor	Pete Flanigan	8/10/2009	Adult	M	647.5	94.8	30.0	S	50	
pooled	Rye Harbor	Pete Flanigan	8/10/2009	Adult	M	375.5	82.6	21.3	S	52	
pooled	Rye Harbor	Pete Flanigan	8/17/2009	Adult	M	598.2	94.4	26.4	S	<42	
pooled	Rye Harbor	Pete Flanigan	8/17/2009	Adult	M	657.7	94.4	26.5	S	<42	
pooled	Rye Harbor	Pete Flanigan	8/17/2009	Adult	M	402.3	83.3	18.7	S	43	
pooled	Rye Harbor	Pete Flanigan	8/17/2009	Adult	F	377.0	85.3	23.9	S	<42	
pooled	Rye Harbor	Pete Flanigan	8/24/2009	Adult	M	669.3	93.4	25.6	H	<42	
pooled	Rye Harbor	Pete Flanigan	8/24/2009	Adult	M	410.6	93.4	26.9	S	<42	
pooled	Rye Harbor	Pete Flanigan	8/24/2009	Adult	F	456.5	82.3	20.8	S	40	
pooled	Rye Harbor	Pete Flanigan	8/24/2009	Adult	M	498.7	84.3	22.8	S	<42	
1751	Offshore	NHF&G	6/15/2010	Juvenile	pooled	pooled	pooled	pooled	pooled	<42	
2682	Offshore	NHF&G	7/13/2010	Juvenile	pooled	pooled	pooled	pooled	pooled	<42	
2761	Inshore	NHF&G	7/13/2010	Juvenile	pooled	pooled	pooled	pooled	pooled	<42	23 lobsters
3233	Inshore	NHF&G	8/3/2010	Juvenile	pooled	pooled	pooled	pooled	pooled	<42	
3544	Offshore	NHF&G	8/9/2010	Juvenile	pooled	pooled	pooled	pooled	pooled	<42	16 lobsters
3545	Inshore	NHF&G	8/9/2010	Juvenile	pooled	pooled	pooled	pooled	pooled	<42	41 lobsters
4186	Inshore	NHF&G	9/13/2010	Juvenile	pooled	pooled	pooled	pooled	pooled	<42	42 lobsters
4187	Offshore	NHF&G	9/13/2010	Juvenile	pooled	pooled	pooled	pooled	pooled	<42	26 lobsters
2757	Rye Harbor	Pete Flanigan	7/13/2010	Adult	M	354.4g	87.1	20.2	S	<42	cull
2758	Rye Harbor	Pete Flanigan	7/13/2010	Adult	F	435.1	85.5	16.9	S	<42	
2759	Rye Harbor	Pete Flanigan	7/13/2010	Adult	F	440.9	86.8	26.3	S	<42	cull
2760	Rye Harbor	Pete Flanigan	7/13/2010	Adult	M	416.7	84.2	22.6	S	<42	
2871	Rye Harbor	Pete Flanigan	7/21/2010	Adult	F	356.0	87.3	20.1	S	<42	pistol
2872	Rye	Pete	7/21/2010	Adult	M	428.3	88.3	21.4	S	<42	cull

	Harbor	Flanigan									
2873	Rye Harbor	Pete Flanigan	7/21/2010	Adult	F	367.8	89.4	18.9	S	<42	pistol
2874	Rye Harbor	Pete Flanigan	7/21/2010	Adult	M	405.7	83.3	20.7	H	<42	cull
4525	Rye Harbor	Pete Flanigan	7/28/2010	Adult	M	291	90.4	19.7	S	<42	pistol
4526	Rye Harbor	Pete Flanigan	7/28/2010	Adult	F	315.9	84.7	19.3	H	<42	cull
4527	Rye Harbor	Pete Flanigan	7/28/2010	Adult	F	314.6	86.6	18.5	S	<42	cull
4528	Rye Harbor	Pete Flanigan	7/28/2010	Adult	M	278	90.5	22.1	S	<42	
3540	Rye Harbor	Pete Flanigan	8/10/2010	Adult	F	316.2	85.1	18.2	S	<42	pistol
3541	Rye Harbor	Pete Flanigan	8/10/2010	Adult	M	446.3	85.4	18.9	H	<42	
3542	Rye Harbor	Pete Flanigan	8/10/2010	Adult	M	442.0	87.1	17.9	S	<42	cull
3543	Rye Harbor	Pete Flanigan	8/10/2010	Adult	F	429.2	83.6	21.1	S	<42	cull
3654	Rye Harbor	Pete Flanigan	8/16/2010	Adult	M	455.0	83.4	19.2	S	<42	
3655	Rye Harbor	Pete Flanigan	8/16/2010	Adult	F	427.2	83.4	22.8	S	<42	
3656	Rye Harbor	Pete Flanigan	8/16/2010	Adult	M	403.2	88.7	16.5	H	<42	cull
3657	Rye Harbor	Pete Flanigan	8/16/2010	Adult	F	382.6	82.7	17.8	H	<42	cull
3958	Rye Harbor	Pete Flanigan	8/30/2010	Adult	M	545.3	87.3	29.3	S	<42	
3959	Rye Harbor	Pete Flanigan	8/30/2010	Adult	M	408.9	81.3	15.6	S	<42	
3960	Rye Harbor	Pete Flanigan	8/30/2010	Adult	F	450.2	83.3	15.6	S	<42	
3961	Rye Harbor	Pete Flanigan	8/30/2010	Adult	F	455.4	82.3	16.1	S	<42	
4215	Rye Harbor	Pete Flanigan	9/8/2010	Adult	M	461.6	90.1	25.5	S	<42	
4216	Rye Harbor	Pete Flanigan	9/8/2010	Adult	M	356.7	84.3	19.1	H	<42	
4217	Rye Harbor	Pete Flanigan	9/8/2010	Adult	F	263.5	84.8	17.9	S	<42	pistol
4218	Rye Harbor	Pete Flanigan	9/8/2010	Adult	F	324.1	85.6	14.1	S	<42	cull
4182	Rye Harbor	Pete Flanigan	9/13/2010	Adult	F	490.2	88.8	29.0	S	<42	
4183	Rye Harbor	Pete Flanigan	9/13/2010	Adult	F	451.5	83.9	21.0	S	<42	
4184	Rye Harbor	Pete Flanigan	9/13/2010	Adult	M	434.7	83.7	26.9	S	<42	
4185	Rye Harbor	Pete Flanigan	9/13/2010	Adult	M	329.0	82.2	22.5	S	<42	
4432	Rye Harbor	Pete Flanigan	9/22/2010	Adult	M	340	88.7	19.6	H	<42	

4433	Rye Harbor	Pete Flanigan	9/22/2010	Adult	F	409.2	82.7	13.6	S	<42	
4434	Rye Harbor	Pete Flanigan	9/22/2010	Adult	F	392.7	84.7	14.0	H	<42	
4435	Rye Harbor	Pete Flanigan	9/22/2010	Adult	M	365	85.3	20.8	H	<42	
4428	Rye Harbor	Pete Flanigan	9/28/2010	Adult	M	419.5	84.7	27.1	S	<42	
4429	Rye Harbor	Pete Flanigan	9/28/2010	Adult	M	561.7	88.8	19.3	S	<42	
4430	Rye Harbor	Pete Flanigan	9/28/2010	Adult	F	391.2	85	20.9	S	<42	cull
4431	Rye Harbor	Pete Flanigan	9/28/2010	Adult	F	326.6	83.4	24.1	S	<42	cull
1	Inshore	NHF&G	6/22/2011	Juvenile	M	502.2	85.5	pooled	H	<42	
2	Inshore	NHF&G	6/22/2011	Juvenile	F	199.7	63.9	pooled	H	pooled	
3	Inshore	NHF&G	6/22/2011	Juvenile	M	327.5	81.7	pooled	H	pooled	
4	Inshore	NHF&G	6/22/2011	Juvenile	F	437.5	82.1	pooled	H	pooled	
5	Inshore	NHF&G	6/22/2011	Juvenile	F	392.7	78.4	pooled	H	pooled	
6	Inshore	NHF&G	6/22/2011	Juvenile	M	431.3	83.6	pooled	H	pooled	
7	Inshore	NHF&G	6/22/2011	Juvenile	F	432.2	77.5	pooled	H	pooled	
8	Inshore	NHF&G	6/22/2011	Juvenile	M	361.9	79.2	pooled	H	pooled	
9	Inshore	NHF&G	6/22/2011	Juvenile	M	308.3	75.9	pooled	H	pooled	
10	Inshore	NHF&G	6/22/2011	Juvenile	F	409.6	77.2	pooled	H	pooled	
11	Inshore	NHF&G	6/22/2011	Juvenile	M	327.5	74.9	pooled	H	pooled	
12	Inshore	NHF&G	6/22/2011	Juvenile	F	458.7	79	pooled	H	pooled	
13	Inshore	NHF&G	6/22/2011	Juvenile	M	318.9	71.9	pooled	H	pooled	
14	Inshore	NHF&G	6/22/2011	Juvenile	F	341.7	74.1	pooled	H	pooled	
15	Inshore	NHF&G	6/22/2011	Juvenile	M	242.4	66.5	pooled	H	pooled	
16	Inshore	NHF&G	6/22/2011	Juvenile	F	257.2	66.5	pooled	H	pooled	
17	Inshore	NHF&G	6/22/2011	Juvenile	F	445.2	82.9	pooled	H	pooled	
18	Inshore	NHF&G	6/22/2011	Juvenile	F	263.6	66.1	pooled	H	pooled	
19	Inshore	NHF&G	6/22/2011	Juvenile	M	344.9	72.88	pooled	H	pooled	
20	Inshore	NHF&G	6/22/2011	Juvenile	M	502.5	83.9	pooled	H	pooled	
21	Inshore	NHF&G	6/22/2011	Juvenile	F	234.6	66.2	pooled	H	pooled	
22	Inshore	NHF&G	6/22/2011	Juvenile	M	467.8	80.3	pooled	H	pooled	
1	Offshore	NHF&G	6/22/2011	Juvenile	F	335.6	76.5	pooled	H	<42	
2	Offshore	NHF&G	6/22/2011	Juvenile	M	358.7	77.1	pooled	H	pooled	
3	Offshore	NHF&G	6/22/2011	Juvenile	M	228.1	68.1	pooled	H	pooled	
4	Offshore	NHF&G	6/22/2011	Juvenile	F	535.2	82.1	pooled	H	pooled	
5	Offshore	NHF&G	6/22/2011	Juvenile	F	430.9	78.2	pooled	H	pooled	
6	Offshore	NHF&G	6/22/2011	Juvenile	F	572.1	90	pooled	H	pooled	
7	Offshore	NHF&G	6/22/2011	Juvenile	M	813.1	96.4	pooled	H	pooled	
8	Offshore	NHF&G	6/22/2011	Juvenile	M	266.7	69.8	pooled	H	pooled	
9	Offshore	NHF&G	6/22/2011	Juvenile	F	426.7	81	pooled	H	pooled	
10	Offshore	NHF&G	6/22/2011	Juvenile	F	446.9	79.3	pooled	H	pooled	
11	Offshore	NHF&G	6/22/2011	Juvenile	M	361	76.5	pooled	H	pooled	

12	Offshore	NHF&G	6/22/2011	Juvenile	F	410.1	79.1	pooled	H	pooled	
13	Offshore	NHF&G	6/22/2011	Juvenile	F	446.4	83.7	pooled	H	pooled	
14	Offshore	NHF&G	6/22/2011	Juvenile	M	553.8	87.5	pooled	S	pooled	
15	Offshore	NHF&G	6/22/2011	Juvenile	F	393	75.4	pooled	H	pooled	
16	Offshore	NHF&G	6/22/2011	Juvenile	F	163.8	58.6	pooled	H	pooled	
17	Offshore	NHF&G	6/22/2011	Juvenile	F	439	81.4	pooled	H	pooled	
18	Offshore	NHF&G	6/22/2011	Juvenile	F	407	80.9	pooled	H	pooled	
19	Offshore	NHF&G	6/22/2011	Juvenile	M	219.2	63	pooled	H	pooled	
20	Offshore	NHF&G	6/22/2011	Juvenile	M	452.7	80	pooled	H	pooled	
1	Inshore	NHF&G	7/12/2011	Juvenile	F	362	80.1	243.4	H	<42	
2	Inshore	NHF&G	7/12/2011	Juvenile	F	195.2	70.4	pooled	H	pooled	
3	Inshore	NHF&G	7/12/2011	Juvenile	F	244	70.2	pooled	H	pooled	
4	Inshore	NHF&G	7/12/2011	Juvenile	M	341.3	76.3	pooled	H	pooled	
5	Inshore	NHF&G	7/12/2011	Juvenile	F	292.5	74.1	pooled	H	pooled	
6	Inshore	NHF&G	7/12/2011	Juvenile	M	185.1	63.1	pooled	H	pooled	
7	Inshore	NHF&G	7/12/2011	Juvenile	M	292.4	75.1	pooled	H	pooled	
8	Inshore	NHF&G	7/12/2011	Juvenile	F	290.3	75.2	pooled	H	pooled	
9	Inshore	NHF&G	7/12/2011	Juvenile	M	188	71.2	pooled	S	pooled	
10	Inshore	NHF&G	7/12/2011	Juvenile	F	203	68.1	pooled	H	pooled	
11	Inshore	NHF&G	7/12/2011	Juvenile	M	339.2	77.1	pooled	H	pooled	
12	Inshore	NHF&G	7/12/2011	Juvenile	M	364.9	81.7	pooled	S	pooled	
13	Inshore	NHF&G	7/12/2011	Juvenile	F	155.7	61.7	pooled	H	pooled	
14	Inshore	NHF&G	7/12/2011	Juvenile	F	78.3	50.9	pooled	H	pooled	
1	Offshore	NHF&G	7/12/2011	Juvenile	F	451.5	79.5	204.5	H	<42	
2	Offshore	NHF&G	7/12/2011	Juvenile	M	406.3	77.3	pooled	H	pooled	
3	Offshore	NHF&G	7/12/2011	Juvenile	F	421.2	77.4	pooled	H	pooled	
4	Offshore	NHF&G	7/12/2011	Juvenile	M	389.7	74.1	pooled	S	pooled	
5	Offshore	NHF&G	7/12/2011	Juvenile	M	328.1	69.5	pooled	H	pooled	
6	Offshore	NHF&G	7/12/2011	Juvenile	F	213.9	59.1	pooled	H	pooled	
7	Offshore	NHF&G	7/12/2011	Juvenile	F	463.3	81.2	pooled	H	pooled	
8	Offshore	NHF&G	7/12/2011	Juvenile	F	310.6	70.6	pooled	H	pooled	
9	Offshore	NHF&G	7/12/2011	Juvenile	M	272.5	67.8	pooled	H	pooled	
10	Offshore	NHF&G	7/12/2011	Juvenile	M	268.4	68.2	pooled	H	pooled	
11	Offshore	NHF&G	7/12/2011	Juvenile	M	110.2	50.6	pooled	H	pooled	
12	Offshore	NHF&G	7/12/2011	Juvenile	F	87	47.3	pooled	H	pooled	
1	Inshore	NHF&G	8/10/2011	Juvenile	F	149.8	64	177.2	H	<42	
2	Inshore	NHF&G	8/10/2011	Juvenile	F	176.3	56.3	pooled	H	pooled	
3	Inshore	NHF&G	8/10/2011	Juvenile	M	130.3	52.1	pooled	H	pooled	
4	Inshore	NHF&G	8/10/2011	Juvenile	F	242.9	65	pooled	H	pooled	
5	Inshore	NHF&G	8/10/2011	Juvenile	F	204.1	65	pooled	H	pooled	
6	Inshore	NHF&G	8/10/2011	Juvenile	M	307.4	70.6	pooled	H	pooled	
7	Inshore	NHF&G	8/10/2011	Juvenile	M	249.9	64.1	pooled	H	pooled	
8	Inshore	NHF&G	8/10/2011	Juvenile	F	348.9	75.1	pooled	S	pooled	
9	Inshore	NHF&G	8/10/2011	Juvenile	F	259.8	69.2	pooled	H	pooled	

10	Inshore	NHF&G	8/10/2011	Juvenile	F	248.1	64.5	pooled	H	pooled	
11	Inshore	NHF&G	8/10/2011	Juvenile	M	213.1	64.6	pooled	H	pooled	
12	Inshore	NHF&G	8/10/2011	Juvenile	M	253.4	67.3	pooled	H	pooled	
13	Inshore	NHF&G	8/10/2011	Juvenile	M	290.6	69.2	pooled	H	pooled	
1	Offshore	NHF&G	8/10/2011	Juvenile	M	470.4	77.3	164.5	S	<42	
2	Offshore	NHF&G	8/10/2011	Juvenile	M	350.9	73.4	pooled	H	pooled	
3	Offshore	NHF&G	8/10/2011	Juvenile	M	242.5	66.1	pooled	S	pooled	
4	Offshore	NHF&G	8/10/2011	Juvenile	F	182.8	60.6	pooled	H	pooled	
5	Offshore	NHF&G	8/10/2011	Juvenile	F	487.7	82.8	pooled	H	pooled	
6	Offshore	NHF&G	8/10/2011	Juvenile	F	194.8	58.2	pooled	H	pooled	
7	Offshore	NHF&G	8/10/2011	Juvenile	F	98.6	50.1	pooled	H	pooled	
8	Offshore	NHF&G	8/10/2011	Juvenile	F	337.1	73.2	pooled	H	pooled	
9	Offshore	NHF&G	8/10/2011	Juvenile	F	275.2	64.1	pooled	H	pooled	
10	Offshore	NHF&G	8/10/2011	Juvenile	F	227	63.4	pooled	H	pooled	
11	Offshore	NHF&G	8/10/2011	Juvenile	F	196.1	60	pooled	H	pooled	
12	Offshore	NHF&G	8/10/2011	Juvenile	M	88.4	48.4	pooled	H	pooled	
1	Inshore	NHF&G	9/12/2011	Juvenile	F	585.5	87.3	172.6	S	<42	
2	Inshore	NHF&G	9/12/2011	Juvenile	F	389.7	78.5	pooled	S	pooled	
3	Inshore	NHF&G	9/12/2011	Juvenile	F	298.6	70.6	pooled	S	pooled	
4	Inshore	NHF&G	9/12/2011	Juvenile	F	333.9	72.6	pooled	S	pooled	
5	Inshore	NHF&G	9/12/2011	Juvenile	F	286.5	69.2	pooled	S	pooled	
6	Inshore	NHF&G	9/12/2011	Juvenile	F	260.5	66.2	pooled	H	pooled	
7	Inshore	NHF&G	9/12/2011	Juvenile	F	176.1	55.6	pooled	H	pooled	
8	Inshore	NHF&G	9/12/2011	Juvenile	F	317.3	72.1	pooled	H	pooled	
9	Inshore	NHF&G	9/12/2011	Juvenile	M	136.6	53.1	pooled	S	pooled	
10	Inshore	NHF&G	9/12/2011	Juvenile	M	141.9	55	pooled	H	pooled	
11	Inshore	NHF&G	9/12/2011	Juvenile	M	348.8	75.1	pooled	S	pooled	
1	Offshore	NHF&G	9/12/2011	Juvenile	F	298.5	70.1	250.6	H	<42	
2	Offshore	NHF&G	9/12/2011	Juvenile	M	224.7	67.8	pooled	S	pooled	
3	Offshore	NHF&G	9/12/2011	Juvenile	F	372.3	74.5	pooled	H	pooled	
4	Offshore	NHF&G	9/12/2011	Juvenile	F	395.9	76.3	pooled	S	pooled	
5	Offshore	NHF&G	9/12/2011	Juvenile	F	307.5	67.5	pooled	H	pooled	
6	Offshore	NHF&G	9/12/2011	Juvenile	M	301.8	72.1	pooled	S	pooled	
7	Offshore	NHF&G	9/12/2011	Juvenile	F	316.1	71.2	pooled	H	pooled	
8	Offshore	NHF&G	9/12/2011	Juvenile	M	594.2	87.3	pooled	S	pooled	
9	Offshore	NHF&G	9/12/2011	Juvenile	F	344.3	69.2	pooled	H	pooled	
10	Offshore	NHF&G	9/12/2011	Juvenile	M	268.3	66.6	pooled	S	pooled	
11	Offshore	NHF&G	9/12/2011	Juvenile	F	333.0	69.5	pooled	H	pooled	
12	Offshore	NHF&G	9/12/2011	Juvenile	F	365.3	73.4	pooled	H	pooled	
13	Offshore	NHF&G	9/12/2011	Juvenile	F	318.7	75.1	pooled	H	pooled	
1	Rye Harbor	Pete Flanigan	7/26/2011	Adult	F	420.6	81.2	15.8	H	<42	
2	Rye Harbor	Pete Flanigan	7/26/2011	Adult	M	610.8	88.4	19	S	<42	
3	Rye	Pete	7/26/2011	Adult	F	488.3	85.6	19.3	S	<42	

	Harbor	Flanigan									
4	Rye Harbor	Pete Flanigan	7/26/2011	Adult	M	427.5	82.7	20.7	H	<42	
5	Rye Harbor	Pete Flanigan	7/12/2011	Adult	F	568.7	91.2	23	S	<42	
6	Rye Harbor	Pete Flanigan	7/12/2011	Adult	F	445.7	87.3	17.9	S	<42	
7	Rye Harbor	Pete Flanigan	7/12/2011	Adult	F	429.2	83.9	16.3	S	<42	
8	Rye Harbor	Pete Flanigan	7/12/2011	Adult	M	577.6	90.6	24.9	S	<42	
9	Rye Harbor	Pete Flanigan	7/18/2011	Adult	F	491	92	16.4	S	<42	
10	Rye Harbor	Pete Flanigan	7/18/2011	Adult	M	529.6	92.8	14.2	S	<42	
11	Rye Harbor	Pete Flanigan	7/18/2011	Adult	M	533	91.6	12.3	S	<42	
12	Rye Harbor	Pete Flanigan	7/18/2011	Adult	F	512	90.3	16	S	<42	
1	Rye Harbor	Pete Flanigan	8/1/2011	Adult	M	499.1	89.5	17.8	H	<42	
2	Rye Harbor	Pete Flanigan	8/1/2011	Adult	F	284.3	86.7	18.5	H	<42	
3	Rye Harbor	Pete Flanigan	8/1/2011	Adult	F	504.4	85.1	15.3	H	<42	
4	Rye Harbor	Pete Flanigan	8/1/2011	Adult	M	551.1	89.5	18.2	S	<42	
5	Rye Harbor	Pete Flanigan	8/8/2011	Adult	F	516.6	87.8	26.3	S	<42	
6	Rye Harbor	Pete Flanigan	8/8/2011	Adult	M	561.4	88.4	19.8	S	<42	
7	Rye Harbor	Pete Flanigan	8/8/2011	Adult	F	467	82.8	22.8	S	<42	
1	Rye Harbor	Pete Flanigan	9/12/2011	Adult	F	410.2	82.1	16.8	S	<42	
2	Rye Harbor	Pete Flanigan	9/12/2011	Adult	F	147.1	82.5	13.2	S	<42	
3	Rye Harbor	Pete Flanigan	9/12/2011	Adult	M	439.2	85.7	20.7	S	<42	
4	Rye Harbor	Pete Flanigan	9/12/2011	Adult	M	463.4	83	24.2	S	<42	
5	Rye Harbor	Pete Flanigan	9/6/2011	Adult	F	449.3	83.6	19	S	<42	
6	Rye Harbor	Pete Flanigan	9/6/2011	Adult	M	565	88.5	23.6	S	<42	
7	Rye Harbor	Pete Flanigan	9/6/2011	Adult	F	430.4	83.8	17.6	S	<42	
8	Rye Harbor	Pete Flanigan	9/6/2011	Adult	M	471.2	85.3	18	S	<42	
9	Rye Harbor	Pete Flanigan	8/29/2011	Adult	F	484.1	89.3	17.7	S	<42	
10	Rye Harbor	Pete Flanigan	8/29/2011	Adult	F	198.4	85.1	19.4	S	<42	
11	Rye Harbor	Pete Flanigan	8/29/2011	Adult	M	402	81.7	11.8	H	<42	

12	Rye Harbor	Pete Flanigan	8/29/2011	Adult	M	492.9	87.3	17	S	<42	
13	Rye Harbor	Pete Flanigan	8/29/2011	Adult	M	493.5	82.1	15.4	S	<42	
14	Rye Harbor	Pete Flanigan	8/22/2011	Adult	M	571.5	89.3	26.6	S	<42	
15	Rye Harbor	Pete Flanigan	8/22/2011	Adult	F	454.7	86.5	21.2	H	<42	
16	Rye Harbor	Pete Flanigan	8/22/2011	Adult	F	470.8	86.4	16.6	S	<42	
17	Rye Harbor	Pete Flanigan	8/15/2011	Adult	M	402.1	81.2	13.2	S	<42	
18	Rye Harbor	Pete Flanigan	8/15/2011	Adult	M	425.2	81.8	19.4	S	<42	
19	Rye Harbor	Pete Flanigan	8/15/2011	Adult	F	425.7	82.4	17.6	S	<42	
20	Rye Harbor	Pete Flanigan	8/15/2011	Adult	F	461.5	82.3	16.6	H	<42	
1	Rye Harbor	Pete Flanigan	9/19/2011	Adult	F	420.7	85.1	17.6	H	<42	
2	Rye Harbor	Pete Flanigan	9/19/2011	Adult	F	430.1	82.1	17.6	S	<42	
3	Rye Harbor	Pete Flanigan	9/19/2011	Adult	M	392.3	81.4	18.2	H	<42	
4	Rye Harbor	Pete Flanigan	9/19/2011	Adult	M	635.5	90.2	24.1	S	<42	
5	Rye Harbor	Pete Flanigan	9/26/2011	Adult	F	414.8	83.4	18.2	H	<42	
6	Rye Harbor	Pete Flanigan	9/26/2011	Adult	M	470	82.8	22.7	S	<42	
7	Rye Harbor	Pete Flanigan	9/26/2011	Adult	M	681.4	92.1	25.9	S	<42	
8	Rye Harbor	Pete Flanigan	9/26/2011	Adult	F	514.1	84.5	20.1	S	<42	
1	Offshore	NHF&G	6/18/2012	Juvenile	M	-	75	pooled	H	<39	no scale available
2	Offshore	NHF&G	6/18/2012	Juvenile	F	-	68	pooled	H	pooled	no scale available
3	Offshore	NHF&G	6/18/2012	Juvenile	M	-	73.5	pooled	H	pooled	no scale available
4	Offshore	NHF&G	6/18/2012	Juvenile	M	-	76	pooled	H	pooled	no scale available
5	Offshore	NHF&G	6/18/2012	Juvenile	F	-	68.5	pooled	H	pooled	no scale available
6	Offshore	NHF&G	6/18/2012	Juvenile	F	-	75	pooled	H	pooled	no scale available
7	Offshore	NHF&G	6/18/2012	Juvenile	F	-	66	pooled	H	pooled	no scale available
8	Offshore	NHF&G	6/18/2012	Juvenile	F	-	60	pooled	H	pooled	no scale available
9	Offshore	NHF&G	6/18/2012	Juvenile	F	-	74	pooled	H	pooled	no scale available
10	Offshore	NHF&G	6/18/2012	Juvenile	F	-	65	pooled	H	pooled	no scale available
11	Offshore	NHF&G	6/18/2012	Juvenile	M	-	81	pooled	H	pooled	no scale available
12	Offshore	NHF&G	6/18/2012	Juvenile	M	-	64	pooled	H	pooled	no scale available
13	Offshore	NHF&G	6/18/2012	Juvenile	F	-	76	pooled	H	pooled	no scale available
14	Offshore	NHF&G	6/18/2012	Juvenile	F	-	71	pooled	H	pooled	no scale available
1	Inshore	NHF&G	6/25/2012	Juvenile	F	180	60.5	pooled	H	<39	
2	Inshore	NHF&G	6/25/2012	Juvenile	M	223	66	pooled	H	pooled	
3	Inshore	NHF&G	6/25/2012	Juvenile	F	324	72.5	pooled	H	pooled	

4	Inshore	NHF&G	6/25/2012	Juvenile	M	341	75	pooled	H	pooled	
5	Inshore	NHF&G	6/25/2012	Juvenile	M	450	81	pooled	H	pooled	
6	Inshore	NHF&G	6/25/2012	Juvenile	F	260	69.5	pooled	H	pooled	
7	Inshore	NHF&G	6/25/2012	Juvenile	M	397	77	pooled	H	pooled	
8	Inshore	NHF&G	6/25/2012	Juvenile	M	278	70.5	pooled	H	pooled	
9	Inshore	NHF&G	6/25/2012	Juvenile	F	127	53	pooled	H	pooled	
10	Inshore	NHF&G	6/25/2012	Juvenile	M	369	76	pooled	H	pooled	
11	Inshore	NHF&G	6/25/2012	Juvenile	F	72	44.5	pooled	H	pooled	
12	Inshore	NHF&G	6/25/2012	Juvenile	M	97	50.5	pooled	H	pooled	
13	Inshore	NHF&G	6/25/2012	Juvenile	F	201	61.5	pooled	H	pooled	
14	Inshore	NHF&G	6/25/2012	Juvenile	F	140	57	pooled	H	pooled	
15	Inshore	NHF&G	6/25/2012	Juvenile	F	247	66	pooled	H	pooled	
16	Inshore	NHF&G	6/25/2012	Juvenile	F	293	71.5	pooled	H	pooled	
17	Inshore	NHF&G	6/25/2012	Juvenile	F	193	59	pooled	H	pooled	
1	Inshore	NHF&G	7/9/2012	Juvenile	F	356	73.5	pooled	H	<39	
2	Inshore	NHF&G	7/9/2012	Juvenile	M	359	74.5	pooled	H	pooled	
3	Inshore	NHF&G	7/9/2012	Juvenile	M	264	69.5	pooled	H	pooled	
4	Inshore	NHF&G	7/9/2012	Juvenile	F	411	77.5	pooled	H	pooled	
5	Inshore	NHF&G	7/9/2012	Juvenile	M	358	79	pooled	H	pooled	
6	Inshore	NHF&G	7/9/2012	Juvenile	F	392	78	pooled	H	pooled	
7	Inshore	NHF&G	7/9/2012	Juvenile	F	411	81	pooled	H	pooled	
8	Inshore	NHF&G	7/9/2012	Juvenile	F	203	64	pooled	H	pooled	
9	Inshore	NHF&G	7/9/2012	Juvenile	F	252	69	pooled	H	pooled	
10	Inshore	NHF&G	7/9/2012	Juvenile	M	282	71	pooled	H	pooled	
11	Inshore	NHF&G	7/9/2012	Juvenile	F	284	72	pooled	H	pooled	
12	Inshore	NHF&G	7/9/2012	Juvenile	M	253	65.5	pooled	H	pooled	
1	Offshore	NHF&G	7/9/2012	Juvenile	M	516	82	pooled	H	<39	
2	Offshore	NHF&G	7/9/2012	Juvenile	F	103	52	pooled	H	pooled	
3	Offshore	NHF&G	7/9/2012	Juvenile	M	351	75.5	pooled	H	pooled	
4	Offshore	NHF&G	7/9/2012	Juvenile	F	305	70.5	pooled	H	pooled	
5	Offshore	NHF&G	7/9/2012	Juvenile	F	472	82	pooled	H	pooled	
6	Offshore	NHF&G	7/9/2012	Juvenile	F	318	74.5	pooled	H	pooled	
7	Offshore	NHF&G	7/9/2012	Juvenile	F	344	75.5	pooled	H	pooled	
8	Offshore	NHF&G	7/9/2012	Juvenile	F	284	69.5	pooled	H	pooled	
9	Offshore	NHF&G	7/9/2012	Juvenile	F	302	73	pooled	H	pooled	
10	Offshore	NHF&G	7/9/2012	Juvenile	M	284	71	pooled	H	pooled	
11	Offshore	NHF&G	7/9/2012	Juvenile	M	158	56	pooled	H	pooled	
12	Offshore	NHF&G	7/9/2012	Juvenile	F	210	68.5	pooled	H	pooled	
1	Inshore	NHF&G	8/20/2012	Juvenile	M	286	73	pooled	H	<39	
2	Inshore	NHF&G	8/20/2012	Juvenile	M	406	81	pooled	H	pooled	
3	Inshore	NHF&G	8/20/2012	Juvenile	M	384	79	pooled	H	pooled	
4	Inshore	NHF&G	8/20/2012	Juvenile	M	407	81	pooled	H	pooled	
5	Inshore	NHF&G	8/20/2012	Juvenile	M	320	74	pooled	H	pooled	
6	Inshore	NHF&G	8/20/2012	Juvenile	F	312	72.5	pooled	H	pooled	

7	Inshore	NHF&G	8/20/2012	Juvenile	F	328	75	pooled	H	pooled	
8	Inshore	NHF&G	8/20/2012	Juvenile	M	255	72	pooled	H	pooled	
9	Inshore	NHF&G	8/20/2012	Juvenile	M	319	71	pooled	H	pooled	
10	Inshore	NHF&G	8/20/2012	Juvenile	M	275	72	pooled	H	pooled	
11	Inshore	NHF&G	8/20/2012	Juvenile	M	137	55	pooled	H	pooled	
12	Inshore	NHF&G	8/20/2012	Juvenile	F	311	72	pooled	H	pooled	
13	Inshore	NHF&G	8/20/2012	Juvenile	F	164	60	pooled	H	pooled	
14	Inshore	NHF&G	8/20/2012	Juvenile	F	238	70.5	pooled	H	pooled	
15	Inshore	NHF&G	8/20/2012	Juvenile	F	316	74	pooled	H	pooled	
1	Offshore	NHF&G	8/20/2012	Juvenile	F	359	74	pooled	H	<39	
2	Offshore	NHF&G	8/20/2012	Juvenile	M	318	75	pooled	H	pooled	
3	Offshore	NHF&G	8/20/2012	Juvenile	F	159	65	pooled	H	pooled	
4	Offshore	NHF&G	8/20/2012	Juvenile	M	331	74.5	pooled	H	pooled	
5	Offshore	NHF&G	8/20/2012	Juvenile	M	233	67	pooled	S	pooled	
6	Offshore	NHF&G	8/20/2012	Juvenile	F	190	64	pooled	H	pooled	
7	Offshore	NHF&G	8/20/2012	Juvenile	M	194	66.5	pooled	H	pooled	
8	Offshore	NHF&G	8/20/2012	Juvenile	M	237	69	pooled	H	pooled	
9	Offshore	NHF&G	8/20/2012	Juvenile	F	133	57	pooled	H	pooled	
10	Offshore	NHF&G	8/20/2012	Juvenile	F	331	73	pooled	H	pooled	
11	Offshore	NHF&G	8/20/2012	Juvenile	M	414	82.5	pooled	H	pooled	
12	Offshore	NHF&G	8/20/2012	Juvenile	F	476	84	pooled	H	pooled	
13	Offshore	NHF&G	8/20/2012	Juvenile	M	279	70.5	pooled	H	pooled	
14	Offshore	NHF&G	8/20/2012	Juvenile	F	198	61	pooled	H	pooled	
1	Inshore	NHF&G	9/17/2012	Juvenile	M	360	78	pooled	H	<39	
2	Inshore	NHF&G	9/17/2012	Juvenile	M	264	61	pooled	H	pooled	
3	Inshore	NHF&G	9/17/2012	Juvenile	M	329	79	pooled	H	pooled	
4	Inshore	NHF&G	9/17/2012	Juvenile	F	228	66	pooled	H	pooled	
5	Inshore	NHF&G	9/17/2012	Juvenile	F	207	66	pooled	H	pooled	
6	Inshore	NHF&G	9/17/2012	Juvenile	M	292	77	pooled	H	pooled	
7	Inshore	NHF&G	9/17/2012	Juvenile	M	268	76	pooled	H	pooled	
8	Inshore	NHF&G	9/17/2012	Juvenile	M	236	68	pooled	H	pooled	
9	Inshore	NHF&G	9/17/2012	Juvenile	M	319	76	pooled	H	pooled	
10	Inshore	NHF&G	9/17/2012	Juvenile	M	167	58	pooled	H	pooled	
11	Inshore	NHF&G	9/17/2012	Juvenile	M	129	54	pooled	H	pooled	
12	Inshore	NHF&G	9/17/2012	Juvenile	F	165	61	pooled	H	pooled	
13	Inshore	NHF&G	9/17/2012	Juvenile	F	177	67	pooled	H	pooled	
14	Inshore	NHF&G	9/17/2012	Juvenile	M	311	71	pooled	H	pooled	
15	Inshore	NHF&G	9/17/2012	Juvenile	F	288	73	pooled	H	pooled	
1	Offshore	NHF&G	9/17/2012	Juvenile	M	321	73	pooled	H	<39	
2	Offshore	NHF&G	9/17/2012	Juvenile	M	464	81	pooled	H	pooled	
3	Offshore	NHF&G	9/17/2012	Juvenile	M	323	73	pooled	H	pooled	
4	Offshore	NHF&G	9/17/2012	Juvenile	M	386	77	pooled	H	pooled	
5	Offshore	NHF&G	9/17/2012	Juvenile	M	206	68	pooled	H	pooled	
6	Offshore	NHF&G	9/17/2012	Juvenile	M	228	71	pooled	H	pooled	

7	Offshore	NHF&G	9/17/2012	Juvenile	F	343	73	pooled	H	pooled	
8	Offshore	NHF&G	9/17/2012	Juvenile	F	281	70	pooled	H	pooled	
9	Offshore	NHF&G	9/17/2012	Juvenile	M	441	80	pooled	H	pooled	
10	Offshore	NHF&G	9/17/2012	Juvenile	F	243	72	pooled	H	pooled	
11	Offshore	NHF&G	9/17/2012	Juvenile	F	240	68	pooled	H	pooled	
12	Offshore	NHF&G	9/17/2012	Juvenile	M	147	57	pooled	H	pooled	
13	Offshore	NHF&G	9/17/2012	Juvenile	M	284	70	pooled	H	pooled	
14	Offshore	NHF&G	9/17/2012	Juvenile	F	263	69	pooled	H	pooled	
22-17 NH adult #1	Rye Harbor	Pete Flanigan	6/18/2012	Adult	-	-	-	-	-	<39	no individual observations/measurements taken
22-18 NH adult #2	Rye Harbor	Pete Flanigan	6/18/2012	Adult	-	-	-	-	-	<39	no individual observations/measurements taken
22-19 NH adult #3	Rye Harbor	Pete Flanigan	6/18/2012	Adult	-	-	-	-	-	<39	no individual observations/measurements taken
22-20 NH adult #4	Rye Harbor	Pete Flanigan	6/18/2012	Adult	-	-	-	-	-	<39	no individual observations/measurements taken
12-12 NH adult #1	Rye Harbor	Pete Flanigan	7/9/2012	Adult	-	-	-	-	-	<39	no individual observations/measurements taken
12-13 NH adult #2	Rye Harbor	Pete Flanigan	7/9/2012	Adult	-	-	-	-	-	<39	no individual observations/measurements taken
12-14 NH adult #3	Rye Harbor	Pete Flanigan	7/9/2012	Adult	-	-	-	-	-	<39	no individual observations/measurements taken
12-15 NH adult #4	Rye Harbor	Pete Flanigan	7/9/2012	Adult	-	-	-	-	-	<39	no individual observations/measurements taken
14-12 NH adult #1	Rye Harbor	Pete Flanigan	8/13/2012	Adult	-	-	-	-	-	<39	no individual observations/measurements taken
14-13 NH adult #2	Rye Harbor	Pete Flanigan	8/13/2012	Adult	-	-	-	-	-	<39	no individual observations/measurements taken
14-14 NH adult #3	Rye Harbor	Pete Flanigan	8/13/2012	Adult	-	-	-	-	-	<39	no individual observations/measurements taken
14-15 NH adult #4	Rye Harbor	Pete Flanigan	8/13/2012	Adult	-	-	-	-	-	<39	no individual observations/measurements taken
19-12 NH adult #1	Rye Harbor	Pete Flanigan	9/17/2012	Adult	-	-	-	-	-	<39	no individual observations/measurements taken
19-13 NH adult #2	Rye Harbor	Pete Flanigan	9/17/2012	Adult	-	-	-	-	-	<39	no individual observations/measurements taken
19-14 NH adult #3	Rye Harbor	Pete Flanigan	9/17/2012	Adult	-	-	-	-	-	<39	no individual observations/measurements taken
19-15 NH adult #4	Rye Harbor	Pete Flanigan	9/17/2012	Adult	-	-	-	-	-	<39	no individual observations/measurements taken